AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph at page 17, line 1, with the following:

FIG. 16 shows an embodiment of an L-division M-point ~~inverse~~ fast Fourier transformer (L*(M-FFT)) 1522 of FIG. 15. In operation, a receiving deinterleaver 1522a divides an N-sized input signal block into L M-sized small blocks. Then, each of small blocks is M-point ~~inverse~~ fast Fourier transformed through the L M-FFTs (1522b-1, 1522b-2, ... , 1522b-L), where M x L = N. Then, a receiving interleaver 1522c composes an N-sized block by interleaving the outputs of the L M-FFTs (1522b-1, 1522b-2, ... , 1522b-L). FIGS. 17 and 18 show first and second embodiments of the receiving deinterleaver 1522a when N=8, M=2 and L=4. FIG. 19 shows an embodiment of the receiving interleaver 1522c when N=8, M=2 and L=4. FIG. 17 shows the operation of the receiving deinterleaver 1522a of a signal receiving apparatus corresponding to the case in which a transmission interleaver 506c of a signal transmitting apparatus is implemented to operate as shown in FIG. 8. FIG. 18 shows the operation of the receiving deinterleaver 1522a of the signal receiving apparatus corresponding to the case in which a transmission interleaver 506c of a signal transmitting apparatus is implemented to operate as shown in FIG. ~~9~~ 19. Equation 14 shows an embodiment of the operation of the receiving deinterleaver 1522a of FIG. 12, and Equation 15 shows an embodiment of the operation of the receiving deinterleaver 1522a of FIG. 13.

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Please replace the paragraph beginning on page 17, line 20, with the following:

B2

The L M-FFTs (1522b-1, 1522b-2, ... , 1522b-L) receive $\omega_m^l, l = 0,1,...,L-1$ and perform the M-point ~~inverse~~ fast Fourier transform of Equation 16, to thereby output $W_v^l, l = 0,1,...,L-1$.

Please replace the paragraph beginning on page 19, line 20, with the following:

B3

The N-IFFT 2006 N-point inverse fast Fourier transforms the output signal of the FEQ 2004 to a time domain signal w_k. The pilot signal remover 2008 removes the pilot signal added upon transmission.

Please replace the paragraph beginning on page 19, line 29 and ending on page 20, line 2, with the following:

B4

In each of FIGS. 24A and 24B, four different cases of a pilot tone of 1, a pilot tone of 1+1i, a pilot tone of 3+3i, and a pilot tone of 10 are applied for comparison. It can be seen from FIGS. 24A and 24B that the PAR of embodiments of ~~in~~ the present invention increases very little even though the amplitudes of pilot tones are changed, while the PAR in the prior art significantly increases as the amplitudes of pilot tones vary.

Please replace the paragraph beginning on page 20, line 3, with the following:

FIG. 25 is a graph showing channel estimation error of various embodiments according to the present invention shown in FIGS. 10 and 20, channel estimation error of various embodiments in the prior art, and channel estimation error in the optimal case, with respect to signal-to-noise ratios (SNR) in a channel where severe fading occurs. Here, the prior art is based on linear interpolation.

Please replace the paragraph beginning on page 20, line 8, with the following:

As shown in FIG. 25, various embodiments of the present invention can significantly reduce the level of channel estimation error compared to the prior art, and achieves channel estimation error that is similar to that in the optimal case. A simulation made under the channel conditions of severe fading showed that various embodiments of the present invention achieves a bit error ratio (BER) which is only 0.5 to 1dB less than that of the optimal case.

Please replace the paragraph beginning on page 20, line 13, with the following:

According to the present invention, when L=N and M=1, the input of L*(M-IFFT) 506 of FIG. 5 is the same as the output thereof so that signals in time domain are generated. Here, a serial-to-parallel converter 504 and a parallel-to-serial converter 508 of a signal transmitting apparatus are not required. Also, the input of L*(M-FFT) 1522 of FIG. 15 is the same as the output thereof. According to the method of transmitting signals in accordance with ~~of~~ the present invention, signals in time domain are generated and the generated signals are transmitted and data in the

time domain is detected, which is the same as the conventional method for transmitting single carrier signals. However, according to ~~the~~ a signal transmitting method in accordance with ~~of~~ the present invention, the signal transmitting apparatus adds a cyclic prefix to every N-sized block and the signal receiving apparatus removes the cyclic prefix from the received signal, and data is detected by processing of a N-FFT 1508, a FEQ 1510 and a N-IFFT 1520, which is different to the conventional method for transmitting single carrier signals. According to various embodiments of the present invention, an equalizer of the signal receiving apparatus operates in a frequency domain to thereby solve the problems generated when code processed by the equalizer is lengthened by the conventional single carrier signal transmitting method.

Please replace the paragraph beginning on page 20, line 30, with the following:

According to various embodiments of the present invention, signals in the time domain are generated by L*(M-IFFT) 506 so that the maximum PAR value of the signal is as follows.

Please replace the paragraphs beginning on page 21, line 1 and ending on page 22, line 6, with the following:

That is, compared to the conventional OFDM signal, the maximum PAR value of OFDM signal according to various embodiments of the present invention is reduced to $1/\sqrt{L}$. When M = 1, and L = N, the PAR value of the signal according to

these embodiments ~~the present invention~~ is the same as the value of the conventional method for transmitting single carrier signals.

According to various embodiments of the present invention, when 1 < M < N, the PAR of the signal can be further reduced if the conventional method for reducing the PAR of the signal is applied together.

In the paper "OFDM Codes for Peak-to-Average Power Reduction and Error Correction", proc. of Globecom '96, pp. 740 - 744, London, November 1996, N=16 and two 8-symbol complementary codes are interleaved. The PAR of the signal in the conventional OFDM system is 3dB when N=8 and the 8-symbol complementary code is used, but 6.24dB when N=16 and two 8-symbol complementary codes are used. However, according to embodiments of the present invention, when N = 16, L = 2 and M = 8, the PAR of the signal is 3dB, which is 3.24dB less than that obtained using the conventional methods. In the conventional method for reducing the PAR of the signal using a code, when N is increased, the decoder of the receiving terminal becomes very complicated so that N must be small. However, according to various embodiments of the present invention, the symbol of the large N can be divided into L small symbols and the divided symbols can be coded.

In the U.S. Patent Nos. 5787113 and 5623513 entitled "Mitigating Clipping and Quantization Effects in Digital Transmission Systems", when the peak power of the signal exceeds a predetermined clipping level, the total size of a corresponding OFDM symbol must be reduced, so that the power of the symbol must be reduced. In the method for reducing the PAR according to various embodiments of the present invention a block is divided to L * M-sized small blocks so that the size of part of the symbol is reduced and the reduction in power of the total signal is smaller than that

of the conventional method. When information of signal reduction is detected from the receiving terminal and the method for reducing PAR according to various embodiments of the present invention is adopted, the information of signal reduction has an effect on corresponding blocks without having an effect on the total symbol.

B9 concl

Also, according to various embodiments of the present invention, the PAR can be reduced by adding pilot signals in the time domain to achieve channel estimation. Furthermore, a receiving apparatus inserts a virtual pilot tone in the frequency domain to reduce channel estimation error, so that a channel can be more accurately estimated.